

1-3 Motion Problems

$$D = r \times t$$

Basically 3 types

- Roundtrip
- Same direction
- Opposite direction

Roundtrip



Set distances equal

Sep 10-2:02 PM

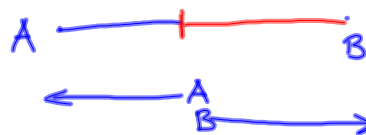
Sep 10-2:03 PM

Same Direction



Set distances equal

Opposite Direction



$$\text{Distance}_A + \text{Distance}_B = \text{Total Distance}$$

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Different

Look to see if anything is equal: Distance, rate, or time

Sep 10-2:06 PM

1. Traveling by highways, Carrie's speed on her way to work is 60 km/h. If she uses local streets to drive the same distance, the trip takes 30 min longer and her speed is 36 km/h. How long does it take her to drive to work by highways?

Same

	r	t	d
Hwy	60	t	$60t$
Local	36	$t + \frac{1}{2}$	$36(t + \frac{1}{2})$

$$60t = 36(t + \frac{1}{2})$$

$$t = \frac{3}{4} \text{ hr}$$

45 min to drive to work by highway

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4. Mr. Rush and Mr. Slow are flying towards each other. Mr. Rush's jet travels at 600 mph; Mr. Slow's jet travels at 320 mph. They leave their home airports, which are 1380 miles apart, at the same time. In how many hours will they meet?

	r	t	d
R	600	t	$600t$
S	320	t	$320t$

$$600t + 320t = 1380$$

$$t = 1.5 \text{ hrs}$$

In 1.5 hrs they will meet

Sep 10-2:11 PM